

What is claimed is:

1. A polarized-light converting unit comprising:
a first polarizing beam splitter; and
a second polarizing beam splitter,

said first polarizing beam splitter and said second polarizing beam splitter being joined in a columned form or shaped in an integrated prism form;

wherein said first polarizing beam splitter includes two incident planes on which two types of color light separated into color light of a specific wavelength band from white light and color light of the remaining wavelength band thereof from the white light are respectively incident, and

said second polarizing beam splitter includes both a first 1/4-wave plate and a first dichroic mirror, and a second 1/4-wave plate and a second dichroic mirror different in wavelength characteristic from the first dichroic mirror, both of which are respectively disposed on two adjacent surfaces different from a junction surface with said first polarizing beam splitter and an outgoing surface thereof.

2. The polarized-light converting unit according to claim 1, wherein said first polarizing beam splitter and said second polarizing beam splitter include a first

polarization separating surface and a second polarization separating surface, respectively, and

the first polarization separating surface and the second polarization separating surface are perpendicular to each other and configured such that surfaces on the cross-line side in which the two surfaces intersect at right angles are defined as outgoing surfaces.

3. The polarized-light converting unit according to claim 1, wherein the first dichroic mirror is disposed on a first surface adjacent to the corresponding outgoing surface and has a characteristic that reflects first color light incident on a first incident plane adjacent to the outgoing surface.

4. The polarized-light converting unit according to claim 3, wherein the second dichroic mirror is disposed on a surface different from the first surface and has a characteristic that reflects a second color light incident on a second incident plane different from the first incident plane.

5. The polarized-light converting unit according to claim 4, wherein the first 1/4-wave plate and the first dichroic mirror, and the second 1/4-wave plate and the second dichroic mirror are respectively disposed on the first incident plane and the second incident plane in order of a 1/4-wave plate and a dichroic mirror.

6. A projector comprising:

a light source unit which irradiates white light;

a plurality of reflection type light bulbs which modulate an illumination light bundle emitted from the light source unit;

color separation/synthesis unit which separates color light for the reflection type light bulbs from the illumination light bundle and combines the color light after the reflection thereof by the reflection type light bulbs;

a projection lens which projectes images on the reflection type light bulbs;

color separating unit, placed in an optical path between the light source unit and the color separation/synthesis unit, which separates the white light emitted from the light source unit into two types of color light of a specific wavelength band thereof and the remaining wavelength band thereof; and

a first polarizing beam splitter and a second polarizing beam splitter on which the two types of color light separated by said color separating means are respectively incident from different incident planes, and which are joined in a columned form or shaped in an integrated prism form;

wherein said first polarizing beam splitter includes

two incident planes on which the two types of color light separated into the color light of the specific wavelength band from the white light and the color light of the remaining wavelength band thereof from the white light are respectively incident, and

said second polarizing beam splitter is provided with both a first 1/4-wave plate and a first dichroic mirror, and a second 1/4-wave plate and a second dichroic mirror different in wavelength characteristic from the first dichroic mirror, both of which are respectively disposed on two adjacent surfaces different from a junction surface with said first polarizing beam splitter and an outgoing surface thereof.

7. The projector according to claim 6, wherein said color separating unit has a dichroic function of reflecting first color light and causing second color light and third color light to pass with respect to the white light comprised of the first color light, the second color light and the third color light corresponding to the three primary colors of incident light.

8. The projector according to claim 6, wherein said color separating unit has a dichroic function of reflecting first color light and second color light and causing third color light to pass with respect to the white light comprised of the first color light, the second color light

and the third color light corresponding to the three primary colors of incident light.

9. The projector according to claim 6, wherein a separating direction of a polarization separating surface of said first polarizing beam splitter and said second polarizing beam splitter as seen from said color separation/synthesis unit and a separating direction of a polarization separating surface of said color separation/synthesis unit are placed in an orthogonal relationship.

10. The projector according to claim 6, wherein a direction of separation of said color separation/synthesis unit and a direction of each short side of said each reflection type light bulb are placed in a positional parallel relationship.

11. The projector according to claim 6, wherein a first multilens array and a second multilens array constituted as an integrator, a focusing lens for superimposing an amount-of-light distribution of each lens cell of the first multilens array on the surface of said each reflection type light bulb, and a condenser lens used as a field lens for bringing the light bundles incident on the reflection type light bulbs into telecentric form are provided in an optical path between the polarized-light converting unit and the reflection type light bulbs.

12. The projector according to claim 6, wherein said first polarizing beam splitter and said second polarizing beam splitter include a first polarization separating surface and a second polarization separating surface, respectively, and

the first polarization separating surface and the second polarization separating surface are perpendicular to each other and configured such that surfaces on the cross-line side in which the two intersect at right angles are defined as outgoing surfaces.

13. The projector according to claim 6, wherein the first dichroic mirror is disposed on a first surface adjacent to the corresponding outgoing surface and has a characteristic that reflects a first color light incident on a first incident plane adjacent to the outgoing surface.

14. The projector according to claim 13, wherein the second dichroic mirror is disposed on a surface different from the first surface and has a characteristic that reflects second color light incident on a second incident plane different from the first incident plane.

15. The projector device according to claim 14, wherein the first 1/4-wave plate and the first dichroic mirror, and the second 1/4-wave plate and the second dichroic mirror are respectively disposed on the first incident plane and the second incident plane in order of a

1/4-wave plate and a dichroic mirror.